

**Claims:**

1. A display element comprising at least two conductive porous layers and a conductive liquid, the conductive porous layers comprising a plurality of  
5 connected conductive particles insulated from the conductive liquid by a dielectric and lyophobic covering, and means for separately connecting a voltage across the at least two porous layers and the liquid such that on sequential application of a voltage to each conductive layer the liquid is displaced from one location to another location, the liquid only returning to the original location upon alternate  
10 sequential application of a voltage.

2. A display element as claimed in claim 1 wherein at least one further layer is provided adjacent to the at least two conductive porous layers, the liquid having a contact angle with the material of the further layer of less than  $60^\circ$ ,  
15 the thickness of the further layer being greater than the thickness of each conductive porous layer but less than the combined thickness of the two conductive porous layers

3. A display element as claimed in claim 1 or 2 wherein the at least  
20 one further layer comprises a plurality of particles.

4. A display element as claimed in any preceding claim wherein the conductive particles are metallic.

25 5. A display element as claimed in claim 4 wherein the conductive particles are organic or inorganic particles covered with a conductive shell.

6. A display element as claimed in claim 5 wherein the thickness of the conductive shell is chosen to create a coloured particle.

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7. A display element as claimed in any preceding claim wherein the dielectric covering is a polymer, a polyelectrolyte, a fluoropolymer, a self assembled monolayer (SAM) or an inorganic shell.

5 8. A display element as claimed in claim 7 wherein the self assembled monolayer comprises a molecule with a group that bonds to the conductive particles and a group that provides a high contact angle with the liquid.

9. A display element as claimed in any of claims 2 to 8 wherein an  
10 intermediate layer of coloured material is provided between the further layer and one of the conductive porous layers.

10. A display element as claimed in claim 9 wherein the material of the intermediate layer comprises a plurality of particles providing an average pore size  
15 substantially the same as that of the upper layer, the liquid having a contact angle with the plurality of particles of less than 60°.

11. A display element as claimed in any preceding claim wherein each layer has a pore size greater than 30 nm and less than 2µm.

20 12. A display element as claimed in any of claims 2 to 11 wherein the conductive liquid and the material of the further layer have substantially the same refractive index.

25 13. A display element as claimed in any preceding claim wherein the conductive liquid is created by adding ions to a solvent.

14. A display element as claimed in any of claims 1 to 12 wherein the conductive liquid is an ionic liquid.

30 15. A display element as claimed in any preceding claim wherein the conductive liquid contains a dye or pigment to provide a coloured liquid.

16. A display element as claimed in any of claims 2 to 15 wherein the further layer comprises a photonic crystal structure.

17. A device comprising at least one display element as claimed in any  
5 preceding claim including means for connection of each element to a circuit to create a matrix display.

18. A device comprising at least one element as claimed in any of  
claims 1 to 16, the materials of each layer being coated onto a support material.  
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19. A device as claimed in claim 18 wherein each element is environmentally sealed.